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Patent Docket No. 5175-155

PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re: Gross *et al.*
Serial No.: 10/686,762
Filed: October 16, 2003

Group Art Unit: 3644
Confirmation No.: 8686
Examiner: Hayes, Bret C.

For: **METHODS AND APPARATUS FOR SUPPORTING EGGS DURING IN OVO
INJECTION**

Date: July 28, 2005

Mail Stop Appeal Brief - Patents
Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

APPELLANTS' REVISED BRIEF ON APPEAL UNDER 37 C.F.R. §1.191

Sir:

This Appeal Brief is filed pursuant to the "Notice of Appeal to the Board of Patent Appeals and Interferences" filed February 28, 2005, and the Notification of Non-Compliant Appeal Brief mailed on July 12, 2005. This Appeal Brief replaces the Appeal Brief filed on April 19, 2005.

It is not believed that an extension of time is required. In the event, however, that an extension of time is necessary to allow consideration of this paper, such an extension is hereby petitioned under 37 C.F.R. §1.136(a). Any additional fees believed to be due in connection with this paper may be charged to our Deposit Account No. 50-0220.

Real Party In Interest

The real party in interest is assignee Embrex, Inc., Durham, North Carolina.

Related Appeals and Interferences

Appellants are aware of no appeals or interferences that would be affected by the present appeal.

Status of Claims

Appellants appeal the final rejection of pending Claims 1-29 which, as of the filing date of this Brief, remain under consideration. The attached Appendix A presents the claims at issue as finally rejected in the Final Office Action mailed November 30, 2004, and the Advisory Action mailed January 13, 2005.

Status of Amendments

The attached Appendix A presents the claims as amended by the Response to Office Action of June 21, 2004, which was received by the U.S. Patent and Trademark Office on September 16, 2004. These Amendments were entered.

Summary of the Claimed Subject Matter

1. Independent Claim 1

Independent Claim 1 is directed to an *in ovo* injection apparatus 100 (Fig. 5) for injecting substances into eggs that includes an egg support assembly 130 that solidly supports each egg during injection. The egg support assembly 130 is illustrated in Figs. 6-14 and described at Page 9, Line 2 through Page 12, Line 24. Sequential operations for supporting an egg are illustrated in Figs. 15A-15E. Claim 1 has been rewritten below to include reference numerals that indicate where the elements of Claim 1 are found in the various figures of the application.

1. An *in ovo* injection apparatus (100), comprising:
 - an egg carrier (15) that holds a plurality of eggs and provides external access to the eggs;
 - a plurality of injection devices (25) positioned above the carrier (15), wherein each injection device (25) is configured to contact a respective egg in the carrier (15) and deliver a predetermined dosage of a treatment substance into the egg and/or remove material from the egg; and
 - an egg support assembly (130) positioned beneath the carrier (15) that is configured to solidly support each egg in the carrier (15) during contact therewith by a respective injection device (25) and to prevent each egg from being pushed downwardly into the carrier (15) by a respective injection device (25).

2. Independent Claim 11

Independent Claim 11 is directed to an *in ovo* injection apparatus 100 (Fig. 5) for injecting substances into eggs that includes an egg support assembly 130 that solidly supports each egg during injection. The egg support assembly 130 is illustrated in Figs. 6-14 and described at Page 9, Line 2 through Page 12, Line 24. Claim 11 has been rewritten below to include reference numerals that indicate where the elements of Claim 11 are found in the various figures of the application.

11. An *in ovo* injection apparatus (100), comprising:

an egg carrier (15) that holds a plurality of eggs and provides external access to the eggs;

a plurality of injection devices (25) positioned above the carrier (15), wherein each injection device (25) is configured to contact a respective egg in the carrier (15) and deliver a predetermined dosage of a treatment substance into the egg and/or remove material from the egg; and

an egg support assembly (130) positioned beneath the carrier (15) that is configured to solidly support each egg in the carrier (15); wherein the egg support assembly (130) prevents each egg from being pushed downwardly into the carrier (15) by a respective injection device (25), and wherein the egg support assembly (130) lifts each egg upwardly from the carrier (15) during contact therewith by a respective injection device (25), wherein the egg support assembly (130) comprises:

a frame (152) movable between an operative position and a retracted position;

a plate (132) attached to the frame (152) and comprising an array of openings (133) formed therein; and

a plurality of pedestals (134), each pedestal (134) removably and snugly secured within a respective one of the openings (133), wherein each pedestal (134) comprises a free end portion (134b) configured to engage an egg within the carrier (15) when the frame (152) is in the operative position.

3. Independent Claim 19

Independent Claim 19 is directed to an *in ovo* injection apparatus 100 (Fig. 5) for injecting substances into eggs that includes an egg support assembly 130 that solidly supports each egg during injection. The egg support assembly 130 is illustrated in Figs. 6-14 and described at Page 9, Line 2 through Page 12, Line 24. Claim 19 has been rewritten below to include reference numerals that indicate where the elements of Claim 19 are found in the various figures of the application.

19. An *in ovo* injection apparatus (100), comprising:

an egg carrier (15) that holds a plurality of eggs and provides external access to the eggs;

a plurality of injection devices (25) positioned above the carrier (15), wherein each injection device (25) is configured to contact a respective egg in the carrier (15) to inject a treatment substance into the egg and deliver a predetermined dosage of a treatment substance into the egg and/or remove material from the egg; and

an egg support assembly (130) positioned beneath the carrier (15) that is configured to solidly support each egg in the carrier (15) during contact therewith by a respective injection device (25), and prevent each egg from being pushed downwardly into the carrier (15) by a respective injection device (25), wherein the egg support assembly (130) comprises:

a frame (152) movable between an operative position and a retracted position;

a plate (132) attached to the frame (152) and comprising an array of openings (133) formed therein; and

a plurality of pedestals (134), each pedestal (134) removably and snugly secured within a respective one of the openings (133), wherein each pedestal (134) comprises a concave free end portion (134b) configured to engage an egg within the carrier (15) when the frame (152) is in the operative position, and wherein a height of the free end portion (134b) of each pedestal (134) relative to the plate (132) is adjustable.

4. Independent Claim 26

Independent Claim 26 is directed to a method of injecting eggs *in ovo*, wherein eggs are supported from beneath while being injected. The method is described with respect to Figs 15A-15E and in the specification, for example, at Page 12, Line 25 - Page 13, Line 7. Claim 26 has been rewritten below to include reference numerals that indicate where the elements of Claim 26 are found in the various figures of the application.

26. A method of injecting eggs *in ovo*, comprising:

positioning an egg carrier (15) containing a plurality of eggs beneath a plurality of injection devices (25), wherein each injection device (25) is configured to contact a respective egg in the carrier (15) and deliver a predetermined dosage of a treatment substance into the egg and/or remove material from the egg; and

supporting the plurality of eggs from beneath the egg carrier (15) while simultaneously delivering a predetermined dosage of a treatment substance into each egg and/or removing material from each egg such that the eggs are prevented from being pushed downwardly into the carrier (15) by a respective injection device (25).

None of the independent claims include means-plus-function recitations.

Grounds of Rejection to be Reviewed on Appeal

Claims 1-3, 8-12, 16-21 and 24-29 stand rejected under 35 U.S.C. §102(b) as being anticipated by U.S. Patent No. 6,032,612 to Williams ("Williams"). Claims 5-7, 13-15, 22, 23, 26, 27 and 29 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Williams. Claims 4, 21 and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Williams in view of U.S. Patent No. 4,040,388 to Miller ("Miller").

Grouping of Claims

For purposes of this appeal, Claims 1-3, 8-12, 16-21 and 24-29 (Group I) may be considered as standing or falling together, Claims 5, 6, 13, 14 and 22 (Group II) may be considered as standing or falling together, Claims 7, 15 and 23 (Group III) may be considered as standing or falling together, Claims 26, 27 and 29 (Group IV) may be considered as standing or falling together, and Claims 4, 21 and 28 (Group V) may be considered as standing or falling together.

Arguments

1. Claims 1-3, 8-12, 16-21 and 24-29 Are Not Anticipated By Williams

A claim is anticipated under 35 U.S.C. §102 if each claimed element is found in a single prior art reference. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d 1565, 1576 (Fed. Cir. 1991); *Carella v. Starlight Archery and Pro Line Co.*, 804 F.2d 135, 138 (Fed. Cir. 1986). There must be no difference between the claimed invention and the reference disclosure, as viewed by an ordinary artisan. *Scripps Clinic & Research Foundation v. Genentech, Inc.*, 927 F.2d at 1576.

Appellants' independent Claim 1 recites an *in ovo* injection apparatus, comprising:

an egg carrier that holds a plurality of eggs and provides external access to the eggs;

a plurality of injection devices positioned above the carrier, wherein each injection device is configured to contact a respective egg in the carrier and deliver a predetermined dosage of a treatment substance into the egg and/or remove material from the egg; and

an egg support assembly positioned beneath the carrier that is configured to **solidly support each egg in the carrier** during contact therewith by a respective injection device and to **prevent each egg from being pushed downwardly into the carrier by a respective injection device**.

Independent Claims 11, 19 and 26 contain similar recitations.

The Final Action states that "there is no structural or functional difference between the claimed support pedestal and the Williams' pedestal **26 of Fig. 10**." (Final Action, Page 6). The Final Action also states that the "Williams' pedestal solidly supports an egg and prevents it from being pushed downwardly into the carrier by a[n]...injection device as claimed" and that "if not, the descending injection devices of **Fig. 10** would be unable to perform." (Final Action, Page 6). Appellants traverse these unsupported allegations.

Figs. 3 and 10 from Williams are set forth below.

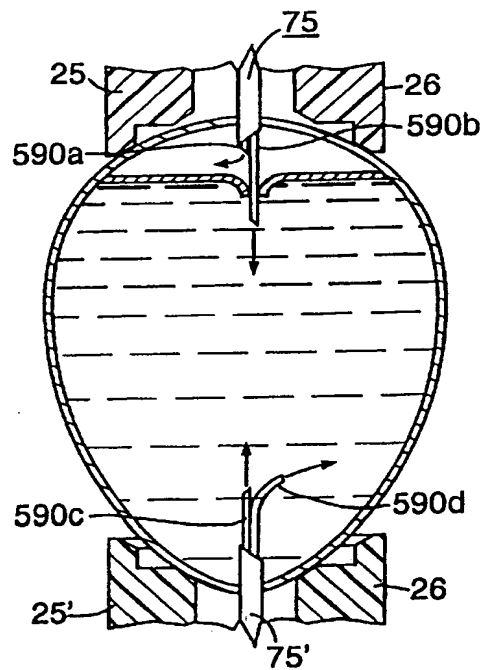
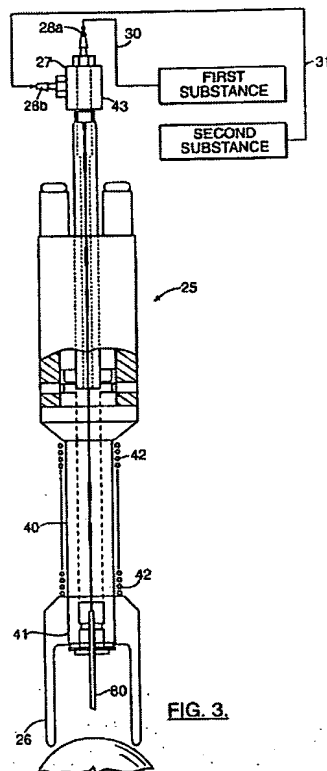


FIG. 10.

The bottom injection device 25' illustrated in Fig. 10 of Williams is identical in structure and function to the top injection device 25, with the exception that the illustrated bottom injection device 25' includes two needles for injecting material into an egg. Williams specifically states that "the description describes a unit with a single multi-site injection device 25 (shown as a top injection device) but the description also applies to an apparatus with multiple injection devices 25', 25" (exemplarily [sic] shown in Figs. 10 and 11), or alternatively, one or more of single bottom or side devices." (Williams, Col. 6, Lines 16-21). In describing the injection device 25, Williams states:

The device includes an egg locating member, or *egg engaging member 26*, connected to the body member bottom end portion, which as illustrated *is slidably connected to the body member and includes a spring 42 to both cushion the engagement*, and hold the egg in place during the downstroke of the injection head. (Williams, Col. 7, Lines 3-8; emphasis added).

The Williams egg engaging member 26 does *not* serve the function of a support that is configured to solidly support an egg against the opposing force of an injection device. Nothing in Williams teaches or suggests supporting an egg against the opposing force of injection device 25 with the bottom injection device 25'. Moreover, the Final Action fails to cite any passage(s) in Williams that supports the allegation that the bottom injection device

25' solidly supports an egg in a carrier during contact therewith by a respective top injection device and that ***prevents the egg from being pushed downwardly into the carrier by the respective injection device***, as recited in each of Appellants' independent claims (Claims 1, 11, 19 and 26). **Fig. 10** of Williams is merely provided to show that multiple injection devices may be utilized and/or that an injection device may be utilized at different locations relative to an egg. In fact, there is no teaching or suggestion in Williams of using the bottom injection device **25'** to solidly support an egg during injection via a top injection device **25**.

Furthermore, the injection device described in Williams is unsuitable for ***solidly*** supporting an egg and preventing an egg from being pushed downwardly into a carrier by an injection device as maintained by the Final Action. The egg engaging member **26** of the injection device **25'** is ***slidably*** connected to the body member of the injection device **25'**. In addition, the injection device **25'** of Williams includes a spring **42** that is designed to ***cushion*** the engagement of the engaging member **26** with an egg. To be capable of solidly supporting an egg, the spring **42** would have to be virtually rigid and incapable of deflection. This would appear to be in direct conflict with the stated purpose of the Williams injection device. As such, there is indeed significant structural and functional differences between the Williams bottom injection device and the egg support assembly recited in Appellants' independent claims.

The Final Action also states that the descending injection devices **25** of **Fig. 10** would be unable to perform without the bottom injection device **25'** solidly supporting an egg. (Final Action, Page 6). The Final Action does not cite any passage(s) in Williams for this allegation. This unsupported allegation is simply not true. In fact, Williams states:

The apparatus of the instant invention can also employ a side or bottom injection device **25', 25"**. ***One or more of these alternative injection devices can be used concurrently with a top injecting device or subsequent or prior in time.*** (Williams, Col. 9, Lines 48-51).

Williams clearly states that a side or bottom injection device can be used concurrently with a top injection device or subsequent or prior in time. Williams does not require the presence of a side or bottom injection device to support an egg when a top injection device is used. Nothing in Williams teaches or suggests supporting an egg against the opposing force of a top injection device **25**, much less with a bottom injection device **25'**.

As viewed by the ordinary artisan, there is a great difference between the egg support assembly of Appellants' invention as recited in independent Claims 1, 11, 19 and 26 and the

bottom injection device **25'** of Williams. Because Williams does not disclose all of the recited elements of independent Claims 1, 11, 19 and 26, these claims and all claims depending therefrom are not anticipated by Williams.

Appellants' Claim 2 recites an egg support assembly that comprises:

- a frame movable between an operative position and a retracted position;
- a plate attached to the frame and comprising an array of openings formed therein; and
- a plurality of pedestals, each pedestal removably and snugly secured within a respective one of the openings, wherein each pedestal comprises a free end portion configured to engage an egg within the carrier when the frame is in the operative position.

Claims 11, 19 and 27 contain similar recitations.

The recited structure of Claim 2 is illustrated in **Figs. 7 and 8** from Appellants' application, which are set forth below.

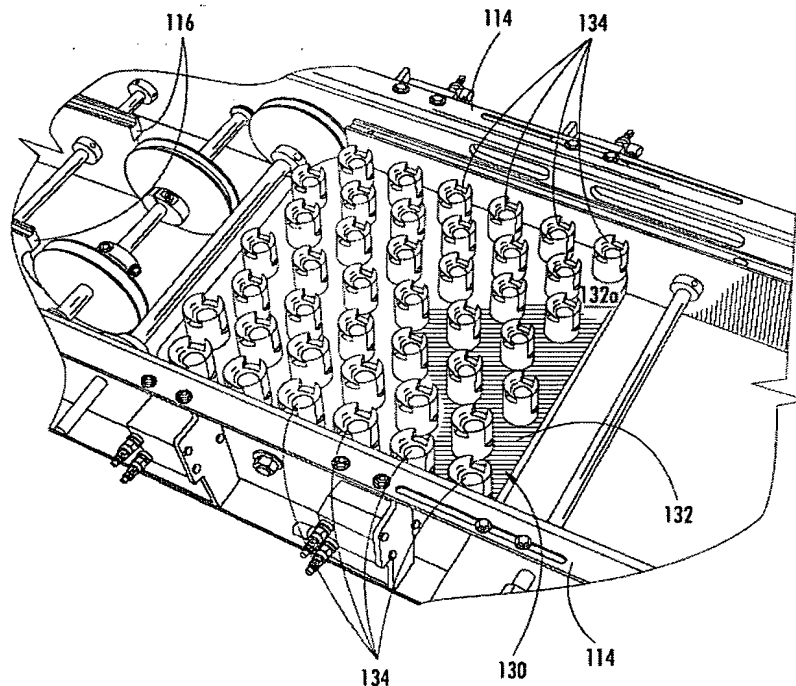
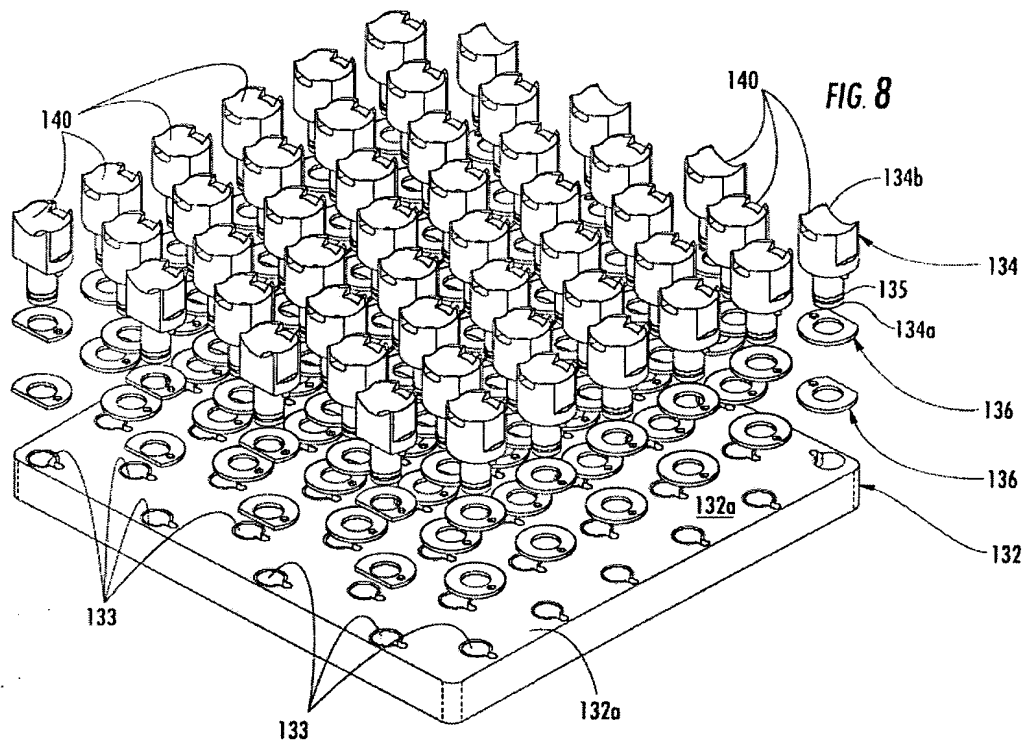


FIG. 7

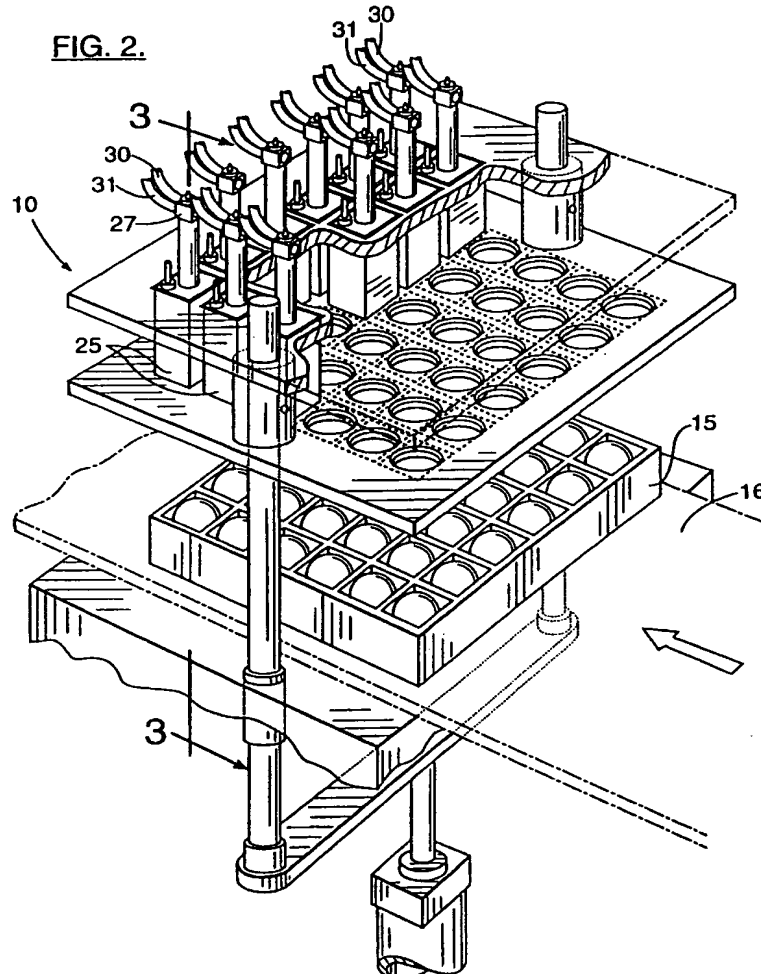


Appellants' egg support assembly 130, as described above, is configured to support each egg in an egg flat during contact by an egg injection device 25. The illustrated egg support assembly 130 includes a plate 132 having a plurality of pedestals 134 extending from an upper surface 132a of the plate 132. Each pedestal 134 is configured to support a respective egg in an egg flat positioned thereover. The plate 132 includes an array of openings 133 formed therein in a pattern matching the array of pockets in an egg flat. Each pedestal 134 is removably secured within a respective one of the plate openings 133. Each pedestal 134 includes a proximal end 134a and a distal free end 134b. An O-ring 135 is secured to each pedestal adjacent the proximal end 134a and provides a *snug, friction fit* when the proximal end 134a is disposed within a respective opening 133. One or more shims 136 may be utilized to adjust the height of the distal end 134b of each pedestal 134 above the plate surface 132a, as illustrated. The pedestals 134 are configured to be easily removed from the plate 132 such that shims can be added and removed as necessary.

The Final Action concedes that Williams fails to explicitly state the construction of the egg support assembly. (Final Action, Page 3). However, the Action concludes that "it would be fair to take the disclosed structure of the upper assembly as a guide for the lower assembly." (Final Action, Page 3). The Final Action, thus, has taken the position that the structure of the

injection apparatus of **Fig. 2** of Williams anticipates the recited structure of the egg support assembly in Appellants' Claim 2.

Fig. 2 from Williams is set forth below:

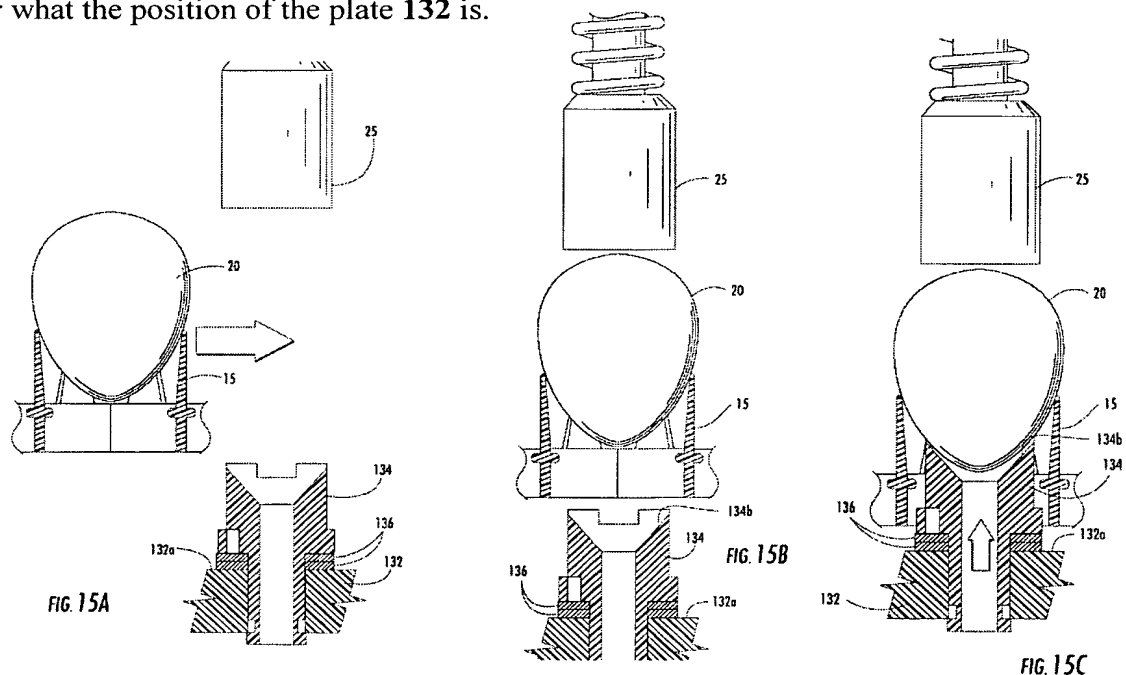


The illustrated Williams apparatus **10** is an embodiment of the Embrex® Inovoject® Egg Injection System manufactured and sold by the assignee of the present invention and application. The apparatus **10** includes a flat **15**, a stationary base **16**, and a plurality of injection delivery devices **25** with fluid delivery means such as lumens or needle(s) **90** positioned therein. The flat **15** holds a plurality of eggs **20** in a substantially upright and aligned position. The flat **15** is configured to provide external access to predetermined areas of the eggs **20**. The egg is held in by the flat **15** so that a respective one egg is in proper alignment relative to a corresponding one of the injection devices **25** as the injection device **25** advances towards the base **16** of the apparatus. Each of the injection devices **25** has

opposing first and second ends 26, 27. Each injection device 25 has a first extended position and a second retracted position. Upon extension of the injection device 25, the first end 26 is configured to contact and rest against predetermined areas of the external egg shell. When not injecting, the injection devices 25 are retracted to rest a predetermined distance above the eggs and stationary base 16.

The Williams apparatus 10 includes a generally horizontally oriented tooling plate with openings therethrough. An injection device 25 rests generally vertically in each respective opening in the tooling plate. When the tooling plate is lowered and the egg engaging member 26 of each resting injection device 25 strikes an egg to be injected, the injection device 25 stops while the tooling plate proceeds downwardly until the injection device 25 disengages from the tooling plate. At this point, the injection device 25 is free to move in a translational direction independent of the tooling plate to seek and come to rest upon the top most portion of an egg, even if that egg is slightly tilted. When the tooling plate is raised, it reengages the injection device 25, straightens the injection device 25 with respect to the vertical, and carries it upwardly and away from the egg being injected.

The Williams injection devices 25 are, in fact, *slidably disposed within the openings* in the tooling plate and can move independent of the tooling plate. This is in sharp contrast with Appellants' egg support assembly 130 wherein each pedestal 134 is disposed *snugly* within a respective opening 133 in the plate 132 and wherein movement of the pedestals 134 is *not* independent of the plate 132. As illustrated in Figs. 15A-15E of Appellants' application, and set forth below, each pedestal 134 is in the same contacting relationship with the plate 132, no matter what the position of the plate 132 is.



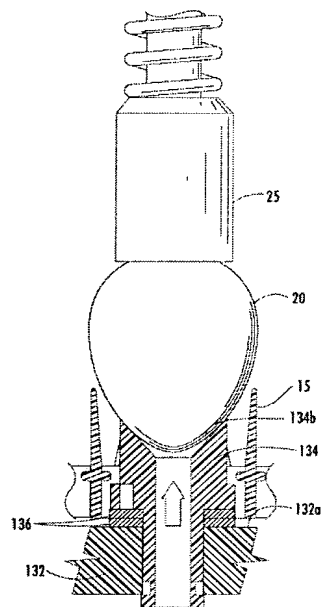


FIG. 15D

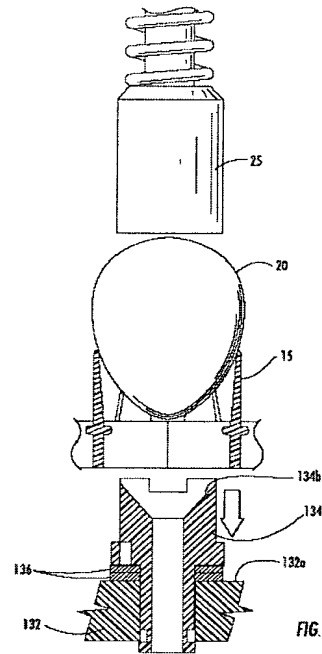


FIG. 15E

Appellants respectfully submit that, because Williams does not disclose a pedestal that is removably *and snugly* secured within a respective one of the openings in a plate, as recited in Claim 2, this claim is not anticipated by Williams. Similarly, Claims 11, 19 and 27 are not anticipated by Williams.

With respect to Claim 3, *without citing any passage(s) in Williams*, the Final Action states that Williams further discloses "wherein the egg support assembly is operatively associated with the plurality of injection devices **25** such that each pedestal moves upwardly through a respective opening in the carrier **15** to support an egg **20** as a respective injection device **25** makes contact with the egg **20**." (Final Action, Page 3). Appellants respectfully assert that Williams does not disclose any such thing, and respectfully request that the passage within Williams that discloses this be identified. The Final Action is confusing an injection device **25'** that is configured to inject an egg from the bottom of the egg with a support pedestal of the present invention. Accordingly, Claim 3 is not anticipated by Williams. For at least the same reasons, Claims 12 and 20 are not anticipated by Williams. In addition, because the Final Action does not identify any passage(s) in Williams in support of its allegation, the rejection under 35 U.S.C. §102 for Claims 3, 11, 19 and 27 is improper.

In view of the above, Appellants respectfully request that the rejections of Claims 1-3, 8-12, 16-21 and 24-29 under 35 U.S.C. §102 be reversed.

2. §103 Rejections Are Overcome

A determination under §103 that an invention would have been obvious to someone of ordinary skill in the art is a conclusion of law based on fact. *Panduit Corp. v. Dennison Mfg. Co.* 810 F.2d 1593, 1 U.S.P.Q.2d 1593 (Fed. Cir. 1987), *cert. denied*, 107 S.Ct. 2187. After the involved facts are determined, the decision maker must then make the legal determination of whether the claimed invention as a whole would have been obvious to a person having ordinary skill in the art at the time the invention was unknown, and just before it was made. *Id.* at 1596. The United States Patent and Trademark Office (USPTO) has the initial burden under § 103 to establish a *prima facie* case of obviousness. *In re Fine*, 837 F.2d 1071, 5 U.S.P.Q.2d 1596, 1598 (Fed. Cir. 1988).

To establish a *prima facie* case of obviousness, the prior art reference or references when combined must teach or suggest *all* the recitations of the claims, and there must be some suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. M.P.E.P. § 2143. The mere fact that references can be combined or modified does not render the resultant combination obvious unless the prior art also suggests the desirability of the combination. M.P.E.P. § 2143.01(citing *In re Mills*, 916 F.2d 680, 16 U.S.P.Q.2d 1430 (Fed. Cir. 1990)). As emphasized by the Court of Appeals for the Federal Circuit, to support combining references, evidence of a suggestion, teaching, or motivation to combine must be **clear and particular**, and this requirement for clear and particular evidence is not met by broad and conclusory statements about the teachings of references. *In re Dembiczak*, 50 U.S.P.Q.2d 1614, 1617 (Fed. Cir. 1999). In an even more recent decision, the Court of Appeals for the Federal Circuit has stated that, to support combining or modifying references, there must be **particular** evidence from the prior art as to the reason the skilled artisan, with no knowledge of the claimed invention, would have selected these components for combination in the manner claimed. *In re Kotzab*, 55 U.S.P.Q.2d 1313, 1317 (Fed. Cir. 2000).

Furthermore, as stated by the Federal Circuit with regard to the selection and combination of references:

This factual question of motivation is material to patentability, and could not be resolved on subjective belief and unknown authority. It is improper, in determining whether a person of ordinary skill would have been led to this combination of references, simply to "[use] that which the inventor taught against its teacher." W.L. Gore v. Garlock, Inc., 721 F.2d 1540, 1553, 220 USPQ 303, 312-13 (Fed. Cir. 1983).

Thus the Board must not only assure that the requisite findings are made, based on evidence of record, but must also explain the reasoning by which the findings are deemed to support the agency's conclusion....

In re Sang Su Lee, 277 F.3d 1338, 1343 (Fed. Cir. 2002).

A. Claims 5, 6, 13, 14 and 22 Are Patentable Over Williams

For at least the same reasons set forth above with respect to 35 U.S.C. §102, Appellants respectfully assert that Williams fails to teach or suggest the recitations of Appellants' independent claims, and all claims depending therefrom. Claim 5 recites that the height of the free end portion of each pedestal relative to the plate is adjustable. The Final Action concedes that Williams fails to disclose this recitation. (Final Action, Page 4). However, the Final Action concludes that it would have been obvious "to adjust a height, since it has been held that the provision of adjustability, where needed, involves only routine skill in the art." (Final Action, Page 4). Appellants respectfully traverse this rejection.

The bottom injection device **25'** of Williams is not a pedestal that solidly supports an egg during injection via a top injection device **25**, is not intended to serve such a function, and in fact does not serve such a function. Moreover, the bottom injection device **25'** is unsuitable for solidly supporting an egg and preventing the egg from being pushed downwardly as discussed above. Accordingly, there is no suggestion or motivation in Williams or anywhere else to adjust the height of the bottom injection device **25'** for a purpose that it is not intended to serve and, in fact, does not serve. As such, a prima facie case of obviousness has not been established for Claim 5 and it is respectfully requested that the rejection of Claim 5 be reversed. For at least the same reasons, it is respectfully requested that the rejections of Claims 13 and 22 be reversed.

Claim 6 recites that the height of the free end portion of each pedestal relative to the plate is adjustable via one or more shims disposed between the free end portion and the plate. The Final Action concedes that Williams fails to disclose this recitation. (Final Action, Page 4). However, the Final Action concludes that it would have been obvious "to use shims to adjust the height, since it was known in the art that shims are commercially available and have been used to adjust height in and make level constructions of all kinds." (Final Action, Page 4). Appellants respectfully traverse this rejection because, as stated above, the bottom injection device **25'** of Williams is not a pedestal that solidly supports an egg during injection

via a top injection device **25**, is not intended to serve such a function, and in fact does not serve such a function. Moreover, the bottom injection device **25'** is unsuitable for solidly supporting an egg and preventing the egg from being pushed downwardly as discussed above. Accordingly, there is no suggestion or motivation in Williams or anywhere else to adjust the height of the bottom injection device **25'** for a purpose that it is not intended to serve and, in fact, does not serve. Moreover, there is no suggestion or motivation in Williams or anywhere else to adjust the height of the bottom injection device **25'** or any of the other injection devices **25** with shims.

As such, a *prima facie* case of obviousness has not been established for Claim 6 and it is respectfully requested that the rejection of Claim 6 be reversed. For at least the same reasons, it is respectfully requested that the rejections of Claims 14 and 22 be reversed.

B. Claims 7, 15 and 23 Are Patentable Over Williams

Claim 7 recites that each pedestal includes a proximal end opposite from the free end portion, and wherein an O-ring is secured to the proximal end that provides a snug, friction fit when the proximal end is disposed within a respective one of the plate openings. The Final Action concedes that Williams fails to disclose this recitation (Final Action, Page 4). However, the Final Action concludes that it would have been obvious to use an O-ring that is secured to the proximal end of the pedestal that "provides a snug, friction fit, since the equivalence of any means for fastening and an O-ring for their use in the friction fitting art and the selection of any known equivalents to an O-ring would be within the level of ordinary skill in the art." (Final Action, Pages 4-5). Appellants respectfully traverse this rejection because, as stated above, the bottom injection device **25'** of Williams is not a pedestal that solidly supports an egg during injection via a top injection device **25**, is not intended to serve such a function, and in fact does not serve such a function. Moreover, the bottom injection device **25'** is unsuitable for solidly supporting an egg and preventing the egg from being pushed downwardly as discussed above. Accordingly, there is no suggestion or motivation in Williams or anywhere else to adjust the height of the bottom injection device **25'** for a purpose that it is not intended to serve and, in fact, does not serve. Moreover, there is no suggestion or motivation in Williams or anywhere else to use an O-ring to provide a snug, friction fit for the bottom injection device **25'** or any of the other injection devices **25**.

As such, a *prima facie* case of obviousness has not been established for Claim 7 and it is respectfully requested that the rejection of Claim 7 be reversed. For at least the same reasons, it is respectfully requested that the rejections of Claims 15 and 23 be reversed.

C. Claims 26, 27 and 29 Are Patentable Over Williams

Claim 26 recites a method of injecting eggs *in ovo*, comprising:

positioning an egg carrier containing a plurality of eggs beneath a plurality of injection devices, wherein each injection device is configured to contact a respective egg in the carrier and deliver a predetermined dosage of a treatment substance into the egg and/or remove material from the egg; and

supporting the plurality of eggs from beneath the egg carrier while simultaneously delivering a predetermined dosage of a treatment substance into each egg and/or removing material from each egg such that the eggs are prevented from being pushed downwardly into the carrier by a respective injection device.

Claim 27 recites that the egg support assembly comprises:

a frame movable between an operative position and a retracted position;
a plate attached to the frame and comprising an array of openings formed therein; and

a plurality of pedestals, each pedestal removably and snugly secured within a respective one of the openings, wherein each pedestal comprises a free end portion configured to engage an egg within the carrier when the frame is in the operative position.

Claim 29 recites that each pedestal free end portion has a concave configuration.

In support of its rejections of Claims 26, 27 and 29, the Final Action states that "in view of the structure disclosed by Williams, the method of operating the device would have been inherent, since it is the normal and logical manner in which the device could be used." (Final Action, Page 5). Appellants respectfully traverse these rejections because the inherency argument proposed by the Final Action fails the test for establishing inherency set forth by the Court of Appeals for the Federal Circuit. The Federal Circuit has set forth the Examiner's burden in establishing a *prima facie* case of inherency as a two-part test. *In re Robertson*, 169 F.3d 743; 49 U.S.P.Q.2d 1949 (Fed. Cir. 1999). Specifically, the Court stated:

If a particular prior art reference does not expressly set forth a particular element of the claim, that reference still may anticipate if that element is "inherent" in its disclosure. To establish inherency, the extrinsic evidence must make clear that the missing descriptive matter is necessarily present in the thing described in the reference, and that it would be so recognized

by persons of ordinary skill. Inherency, however, may not be established by probabilities or possibilities. The mere fact that a certain thing may result from a given set of circumstances is not sufficient.

In re Robertson, 169 F.3d at 745, 49 U.S. P.Q.2d at 1950-51 (emphasis added, quotation and citations omitted).

The Final Action has failed to satisfy the two-part test because it has failed to present clear evidence that a person of ordinary skill would believe that, upon reading Williams, the bottom injection device 25' of Williams could be used as a pedestal for solidly supporting an egg during injection via a top injection device 25. Appellants respectfully assert that one skilled in the art would recognize that the bottom injection device 25' of Williams is unsuitable for **solidly** supporting an egg and preventing an egg from being pushed downwardly into a carrier by an injection device since the egg engaging member 26 of the injection device 25' is **slidably** connected to the body member of the injection device 25'. In addition, the injection device 25' of Williams includes a spring 42 that is designed to **cushion** the engagement of the engaging member 26 with an egg. To be capable of solidly supporting an egg, the spring 42 would have to be virtually rigid and incapable of deflection. This would appear to be in direct conflict with the stated purpose of the Williams injection device.

As such, a prima facie case of obviousness has not been established for Claims 26, 27 and 29 and it is respectfully requested that the rejections of Claims 26, 27 and 29 be reversed.

D. Claims 4, 21 and 28 Are Patentable Over Williams In View of Miller

Claims 4, 21 and 28 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Williams in view of Miller. Appellants' Claim 4 recites that the egg support assembly is configured to lift each egg from the carrier during contact with each egg by a respective injection device. Appellants' Claims 21 and 28 contain similar recitations.

As described above, the primary reference, Williams, fails to teach or suggest an *in ovo* injection apparatus comprising an egg support assembly positioned beneath an egg carrier that is configured to **solidly** support each egg in the carrier during contact therewith by a respective injection device **and to prevent each egg from being pushed downwardly into the carrier by a respective injection device** as recited in each of Appellants' independent claims (Claims 1, 11, 19 and 26). As discussed above, there is no clear and particular teaching or suggestion in Williams of using the bottom injection device 25' to solidly support an egg

during injection via a top injection device **25**. Moreover, the bottom injection device **25'** is unsuitable for solidly supporting an egg and preventing the egg from being pushed downwardly.

The secondary reference, Miller, describes inoculating eggs with an antibiotic solution by a machine which heat-sterilizes a portion of the shell with a hot shoe, drives a square ended needle through the sterilized portion, injects the solution through the needle, withdraws the needle, heat-coagulates a portion of the egg albumin at the hole with the hot shoe and heat-sterilizes the needle before inoculating the next egg. The hot shoe described in Miller only lifts some eggs from a flat because of the size of the egg. In addition, injection of eggs is from the same side of an egg as the hot shoe. As such, the hot shoe does not serve as a support for an egg being injected. Nothing in Miller teaches or suggests a concern with preventing eggs from being pushed downwardly into a flat during injection. Furthermore, the combination of Williams and Miller teaches adding a hot shoe to an injection head and having injection needles go through the hot shoe. The combination of Williams and Miller fails to teach or suggest solidly supporting an egg from the bottom during injection from the top thereof.

As such, a prima facie case of obviousness has not been established for Claims 4, 21 and 28 and it is respectfully requested that the rejections of Claims 4, 21 and 28 be reversed.

Conclusion

In light of the above discussion, Appellants submit that each of the pending claims is patentable over the cited references and, therefore, request reversal of the rejections of Claims 1-29.

It is not believed that an extension of time and/or additional fee(s) are required, beyond those that may otherwise be provided for in documents accompanying this paper. In the event, however, that an extension of time is necessary to allow consideration of this paper, such an extension is hereby petitioned for under 37 C.F.R. §1.136(a). Any additional fees believed to be due in connection with this paper may be charged to Deposit Account No. 50-0220.

Respectfully submitted,



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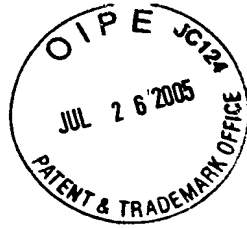
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Erin A. Champion



APPENDIX A
Pending Claims Serial No.: 10/686,762
Filed: October 16, 2003

1. (Previously Presented) An *in ovo* injection apparatus, comprising:
an egg carrier that holds a plurality of eggs and provides external access to the
eggs;

a plurality of injection devices positioned above the carrier, wherein each
injection device is configured to contact a respective egg in the carrier and deliver a
predetermined dosage of a treatment substance into the egg and/or remove material from the
egg; and

an egg support assembly positioned beneath the carrier that is configured to
solidly support each egg in the carrier during contact therewith by a respective injection
device and to prevent each egg from being pushed downwardly into the carrier by a
respective injection device.

2. (Previously Presented) The apparatus of Claim 1, wherein the egg
support assembly comprises:

a frame movable between an operative position and a retracted position;
a plate attached to the frame and comprising an array of openings formed
therein; and

a plurality of pedestals, each pedestal removably and snugly secured within a
respective one of the openings, wherein each pedestal comprises a free end portion
configured to engage an egg within the carrier when the frame is in the operative position.

3. (Original) The apparatus of Claim 2, wherein the egg support
assembly is operatively associated with the plurality of injection devices such that each
pedestal moves upwardly through a respective opening in the carrier to support an egg as a
respective injection device makes contact with the egg.

4. (Original) The apparatus of Claim 1, wherein the egg support
assembly is configured to lift each egg from the carrier during contact with each egg by a
respective injection device.

5. (Original) The apparatus of Claim 2, wherein a height of the free end portion of each pedestal relative to the plate is adjustable.

6. (Previously Presented) The apparatus of Claim 5, wherein the height of the free end portion of each pedestal relative to the plate is adjustable via one or more shims disposed between the free end portion and the plate.

7. (Previously Presented) The apparatus of Claim 2, wherein each pedestal includes a proximal end opposite from the free end portion, and wherein an O-ring is secured to the proximal end that provides a snug, friction fit when the proximal end is disposed within a respective one of the plate openings.

8. (Previously Presented) The apparatus of Claim 2, wherein each pedestal free end portion has a concave configuration.

9. (Previously Presented) The apparatus of Claim 8, wherein each pedestal free end portion comprises a wall that is inclined relative to a centerline of the pedestal that is between about twenty five degrees and about fifty five degrees (25°-55°).

10. (Original) The apparatus of Claim 2, wherein the support assembly frame is movable via actuators selected from the group consisting of pneumatic actuators, hydraulic actuators, electronic actuators, and electromagnetic actuators.

11. (Previously Presented) An *in ovo* injection apparatus, comprising:
an egg carrier that holds a plurality of eggs and provides external access to the eggs;

a plurality of injection devices positioned above the carrier, wherein each injection device is configured to contact a respective egg in the carrier and deliver a predetermined dosage of a treatment substance into the egg and/or remove material from the egg; and

an egg support assembly positioned beneath the carrier that is configured to solidly support each egg in the carrier, wherein the egg support assembly prevents each egg

from being pushed downwardly into the carrier by a respective injection device, and wherein the egg support assembly lifts each egg upwardly from the carrier during contact therewith by a respective injection device, wherein the egg support assembly comprises:

- a frame movable between an operative position and a retracted position;
- a plate attached to the frame and comprising an array of openings formed therein; and
- a plurality of pedestals, each pedestal removably and snugly secured within a respective one of the openings, wherein each pedestal comprises a free end portion configured to engage an egg within the carrier when the frame is in the operative position.

12. (Original) The apparatus of Claim 11, wherein the egg support assembly is operatively associated with the plurality of injection devices such that each pedestal moves upwardly through a respective opening in the carrier to support an egg as a respective injection device makes contact with the egg.

13. (Original) The apparatus of Claim 11, wherein a height of the free end portion of each pedestal relative to the plate is adjustable.

14. (Previously Presented) The apparatus of Claim 13, wherein the height of the free end portion of each pedestal relative to the plate is adjustable via one or more shims disposed between the free end portion and the plate.

15. (Previously Presented) The apparatus of Claim 11, wherein each pedestal includes a proximal end opposite from the free end portion, and wherein an O-ring is secured to the proximal end that provides a snug, friction fit when the proximal end is disposed within a respective one of the plate openings.

16. (Previously Presented) The apparatus of Claim 11, wherein each pedestal free end portion has a concave configuration.

17. (Previously Presented) The apparatus of Claim 16, wherein each pedestal free end portion comprises a wall that is inclined relative to a centerline of the pedestal that is between about twenty five degrees and about fifty five degrees (25°-55°).

18. (Original) The apparatus of Claim 11, wherein the support assembly frame is movable via actuators selected from the group consisting of pneumatic actuators, hydraulic actuators, electronic actuators, and electromagnetic actuators.

19. (Previously Presented) An *in ovo* injection apparatus, comprising:
an egg carrier that holds a plurality of eggs and provides external access to the eggs;

a plurality of injection devices positioned above the carrier, wherein each injection device is configured to contact a respective egg in the carrier and deliver a predetermined dosage of a treatment substance into the egg and/or remove material from the egg; and

an egg support assembly positioned beneath the carrier that is configured to solidly support each egg in the carrier during contact therewith by a respective injection device, and prevent each egg from being pushed downwardly into the carrier by a respective injection device, wherein the egg support assembly comprises:

a frame movable between an operative position and a retracted position;

a plate attached to the frame and comprising an array of openings formed therein; and

a plurality of pedestals, each pedestal removably and snugly secured within a respective one of the openings, wherein each pedestal comprises a concave free end portion configured to engage an egg within the carrier when the frame is in the operative position, and wherein a height of the free end portion of each pedestal relative to the plate is adjustable.

20. (Original) The apparatus of Claim 19, wherein the egg support assembly is operatively associated with the plurality of injection devices such that each

pedestal moves upwardly through a respective opening in the carrier to support an egg as a respective injection device makes contact with the egg.

21. (Original) The apparatus of Claim 19, wherein the egg support assembly is configured to lift each egg from the carrier during contact with each egg by a respective injection device.

22. (Original) The apparatus of Claim 19, wherein a height of the free end portion of each pedestal relative to the plate is adjustable via one or more shims disposed between the free end portion and the plate.

23. (Previously Presented) The apparatus of Claim 19, wherein each pedestal includes a proximal end opposite from the free end portion, and wherein an O-ring is secured to the proximal end that provides a snug, friction fit when the proximal end is disposed within a respective one of the plate openings.

24. (Previously Presented) The apparatus of Claim 19, wherein each pedestal free end portion comprises a wall that is inclined relative to a centerline of the pedestal that is between about twenty five degrees and about fifty five degrees (25°-55°).

25. (Original) The apparatus of Claim 19, wherein the support assembly frame is movable via actuators selected from the group consisting of pneumatic actuators, hydraulic actuators, electronic actuators, and electromagnetic actuators.

26. (Previously Presented) A method of injecting eggs *in ovo*, comprising:
positioning an egg carrier containing a plurality of eggs beneath a plurality of injection devices, wherein each injection device is configured to contact a respective egg in the carrier and deliver a predetermined dosage of a treatment substance into the egg and/or remove material from the egg; and

supporting the plurality of eggs from beneath the egg carrier while simultaneously delivering a predetermined dosage of a treatment substance into each egg

and/or removing material from each egg such that the eggs are prevented from being pushed downwardly into the carrier by a respective injection device.

27. (Previously Presented) The method of Claim 26, wherein supporting the plurality of eggs comprises positioning an egg support assembly beneath the egg carrier, wherein the egg support assembly comprises:

a frame movable between an operative position and a retracted position;
a plate attached to the frame and comprising an array of openings formed therein; and

a plurality of pedestals, each pedestal removably and snugly secured within a respective one of the openings, wherein each pedestal comprises a free end portion configured to engage an egg within the carrier when the frame is in the operative position.

28. (Original) The method of Claim 26, wherein supporting the plurality of eggs comprises lifting the eggs upwardly from the egg carrier.

29. (Previously Presented) The method of Claim 26, wherein each pedestal free end portion has a concave configuration.